



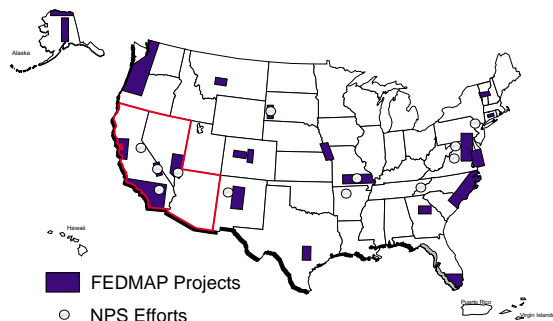
Association of American
State Geologists

in cooperation with

United States
Geological Survey



National Cooperative Geologic Mapping Program



Southwestern United States

The **Southern California Areal Mapping Project** is a cooperative project between the USGS and the California Division of Mines and Geology. Research products include geologic and geophysical maps and technical reports that describe the geologic setting and geologic history of southern California. These products are used to better understand the locations and mechanisms of faulting along the complex mosaic of active faults along the southern San Andreas Fault system. These maps also define the geometry, extent, and stratigraphy of ground-water basins to support water resource needs of the populous desert region and are being used by the Focus on Quaternary Stratigraphy in the Los Angeles region Project to develop a regional-scale stratigraphic model for the Los Angeles basin. The model will be used for ground-water resource management, remediation of contaminants, and evaluating earthquake potential and distribution.

The central Death Valley region is the area of principal discharge for regional ground-water flow from an extensive ground-water system encompassing greater than 15,000 square miles in southern Nevada and southeastern Californian. The **Geologic Framework of the Central Death Valley Region Project** is one component of a multi-agency effort to develop an integrated tectonic, geologic and hydrogeologic data model for the central and southern Death Valley region. The project also works with the National Park Service to develop a regional geologic map database for Death Valley National Park, assess geologic hazards associated with Park Facilities, provide detailed 1:24,000-scale geologic map coverage in areas of principal spring discharge in support of Park management issues related water quality and quantity, and develop interpretive material for public dissemination.



Contact Information:

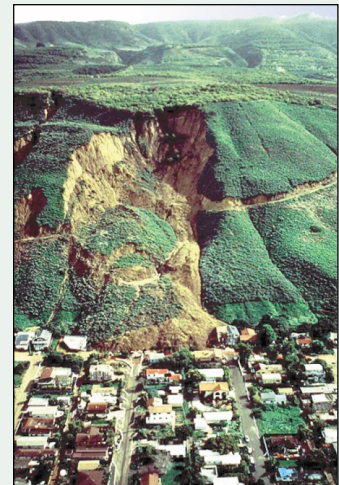
U.S. Geological Survey National Cooperative Geologic Mapping Program
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<http://ncgmp.usgs.gov/>

The **Surficial Geology of the Arid Southwest Project** is a new effort in FY01. This project will construct a new surficial geologic map of the United States at 1:2,500,000-scale. The project will also build geologic map databases of near-surface geology at scales of 1:1,000,000 and 1:100,000. The project seeks to understand and present earthquake and landslide hazards, ecosystem processes, climate history and surface process information at multiple scales. Building upon geologic mapping and ecosystem studies underway by several USGS projects, State Surveys, the Desert Research Institute, and academic research programs, the mapping effort will include regional projects that demonstrate the value of surficial geologic mapping to the evaluation of seismic shaking hazards in the eastern Los Angeles basin and to relations between geology and plant habitats, including invasive species, in other regions.



The **Hydrogeologic Framework of Aquifer Systems in the Desert Southwest Project** is a new effort for FY01. Surface-waters in this part of the country are largely allocated and much of the southwest depends of ground water for municipal, industrial, and agricultural supplies. Working with the USGS Ground-water Resources Program, the project will categorize and characterize complex regional hydrogeologic frameworks and develop three-dimensional geologic maps of ground-water basins. Once categorized, basins will be prioritized for more detailed study based on the potential impacts from human influences such as population demographics, agricultural development, and natural resource extraction. These studies will be closely coordinated and designed with federal, tribal, state, and local entities to address specific water-resource management issues.

Northern California Landslide Working Group is a new FY-2001 partnership project co-funded by the Landslides and Coastal Programs of the USGS. Through geologic mapping and landslide process studies, the project will make hazard analyses for different landslide conditions. The initial focus will be to produce prototype scenario-based landslide hazard maps for the FEMA Project Impact cities of Oakland Berkeley. These scenarios include hazards from both rainfall and earthquake-induced land sliding.



As part of the **Impacts of Climate Change and Land Use in the Southwest Project** supported in cooperation with the USGS Earth Surface Dynamics Program, the NCGMP has begun a new geologic-mapping and land-use effort in Hopi Buttes, part of the Navajo and Hopi Reservations to examine the relations of human health to an environment with known uranium and arsenic contamination. Geologic mapping will characterize geologic and ground-water features and relationships to water quality. A recent analysis of water sources in the Hopi Buttes area indicated that over half of the sources exceed the EPA levels for arsenic. Elevated arsenic levels have been linked to an increased risk of diabetes, a disease prevalent among the local Navajo and Hopi populations. Combined water sampling and geologic characterization of springs and well sites will be used to evaluate conditions responsible for high arsenic levels in ground water and to develop a ground-water flow model that can be used to identify geologic settings to produce good quality water.

Past NCGMP efforts in the Southwestern United States include:

- Las Vegas Urban Corridor/Nevada Test Site Project (1995 – 1999)
- San Francisco Bay Mapping Project (1995 – 2000)